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ABSTRACT

Construct systems and style preferences of 30 student teachers were investigated before and after student teaching using Gregorc's (1982) "Style Delineator" and Kelly's (1955) "Repgrid". The majority of student teachers were found to prefer styles of Concrete Sequential and Abstract Random. Constructs were elicited from students as they compared and contrasted different teacher role types (e.g., Best Teacher, Most Understanding). The "Planet" computer program (Shaw, 1982) was utilized to determine similar patterns and relationships that existed in the subjects' construct systems. As predicted, students whose style preference was Concrete Sequential had a tendency to rate all the teachers with negative or positive characteristics the same on the repertory grid. An analysis of the constructs revealed categories of: personal traits, teaching qualities, and techniques. Shifts in styles were found to have corresponding changes in underlying cognitive structures. Awareness of style types and cognitive structures appears to need further research and consideration for inclusion in teacher education practices. (Author)

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Constructs and Style Preferences of Student Teachers

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Constructs and Style Preferences of Student Teachers

Abstract

Construct systems and style preferences of 30 student teachers were investigated before and after student teaching using Gregorc's (1982) Style Delineator and Kelly's (1955) Repgrid. The majority of student teachers were found to prefer styles of Concrete Sequential and Abstract Random. Constructs were elicited from students as they compared and contrasted different teacher role types (e.g., Best Teacher, Most Understanding). The Planet computer program (Shaw, 1982) was utilized to determine similar patterns and relationships that existed in the subjects' construct systems. As predicted, students whose style preference was Concrete Sequential had a tendency to rate all the teachers with negative or positive characteristics the same on the repertory grid. An analysis of the constructs revealed categories of: personal traits, teaching qualities, and techniques. Shifts in styles were found to have corresponding changes in underlying cognitive structures. Awareness of style types and cognitive structures appears to need further research and consideration for inclusion in teacher education practices.

Constructs and Style Preferences of Student Teachers

The subject of teaching styles and/or learning styles of teachers has had a moderately rich history of research and application. In the last twenty-five years, the field of cognitive psychology has spawned a large body of research under rubrics such as psychological differentiation (Witkin, Dyk, Faterson, & Goodenough, 1962), cognitive complexity (Kelly, 1955), and abstract/concrete dimensions (Harvey, Hunt, & Schroder, 1961).

Basic research into these dimensions of cognitive structures has led to the highly promising but rather disappointing series of studies on aptitude-treatment-interaction approaches to teaching and learning. The field was promising because of its intuitively sound premise: If teachers and learners have preferred teaching and learning styles then surely a matching of those proclivities would lead to superior achievement and performance. The reasoning system underlying this argument has been difficult to demonstrate with firm research evidence (Cronbach & Snow, 1977) but it has continued to be highly appealing to practitioners. The persuasiveness of the argument has made the topic a popular one for inservice programs for teachers and administrators as well as for publications for practitioners and researchers (see Kleine, 1981; 1984).

More recently, researchers have focused on instruments

for determining teaching and learning styles. One of the most widely known categorizations of style preferences is that done by Gregorc (1982). Several reasons for the appeal are obvious: a) the Style Delineator can be administered in 4 minutes; b) the dimensions are easily understood; and c) there are no losers (i.e., It is assumed that each style can be successful with the right students and right environment).

The concept of teaching styles appears to be both important and not clearly understood. While Gregorc proposes to have captured the concrete/abstract and sequential/random dimensions in single words (e.g., perfectionist, insightful), in order that individuals' perceptions and ordering preferences can be easily identified, the underlying organizational, relational linkages in individuals' construct systems, which are the cognitive patterns for perceptions, are not at all clear or straightforward in each of his defined styles.

Theoretical Framework

Personal Construct Theory

The personal construct psychology of Kelly (1955) was used as the theoretical base to explore students' concepts or constructs about teacher role types. Kelly proposed that as individuals seek to make sense of the world, they develop an organized network of constructs that they use to control, predict, and anticipate events. Therefore, individuals'

perceptions in a given situation are determined by their unique, subjective cognitive patterns or "templates" which they have created to develop a theory about reality. Individuals' construct systems or theories continuously change as they validate the accuracy of their anticipations. Hypotheses, tests of experiences, and reconstructions within individuals' systems either enrich or stabilize the basic features of their psychological processes. As construct systems change, individuals change.

Kelly posited that individuals' cognitive systems are composed of dichotomous constructs (e.g., friendly/mean, friendly/unfriendly) that are used to differentiate between and among elements (i.e., individuals, objects, situations) in their environments. Constructs are created when two elements are viewed as similar and in contrast to a third. As a construct is developed, a range of convenience is formed to refer to those elements for which the construct has some applicability.

Kelly's Method of Measuring Constructs

Kelly (1955) devised the repertory grid technique as a means of eliciting dichotomous poles of constructs for a set of elements. It is a qualitative, nonparametric technique originally used to explore individuals' interpersonal construing of different role types. Since the development of the grid, researchers (see Bannister & Fransella, 1980; Pope & Keen, 1981; and Walker, 1985) have found the technique

useful in determining the content and organization of individuals' construct systems, the tones of their systems, and the degree of abstractness, flexibility, and interest of their systems.

Mediation Ability Theory

Gregorc's (1982a; 1984) mediation ability theory was used as the theoretical base to explore students' style preferences. Gregorc proposed that individuals' mediation abilities or styles are reflective indicators of humans' natural and learned capability to receive and express information effectively and efficiently. An individual's perceptual mediation ability to receive, grasp, or perceive information is understood on a concrete-abstract continuum while the ordering mediation ability, to systematize and use information, is defined on a sequential-random dimension.

Gregorc's Method of Measuring Style

Gregorc (1982b) devised the Style Delineator instrument to assist individuals in identifying their perceptual (abstract-concrete) and ordering (sequential-random) mediation preferences. These two sets of preferences were combined into four possible combinations: Concrete Sequential (CS), Abstract Sequential (AS), Abstract Random (AR), and Concrete Random (CR). Single descriptive words, which he determined predominant in "general adult audiences", were chosen to tap 12 categories (e.g., person's view of time, reality, approach to life) in individuals'

unconscious mental processes.

Problem Statement

The present study represents an attempt to examine student teachers' style preferences, as classified on the Gregorc instrument, along with an examination of student teachers' construct systems. More specifically, this study pursued four research questions:

1. What style preferences can be identified among student teachers?
2. What changes occur, if any, on students' scores on the Gregorc Style Delineator during their student teaching semester?
3. Can the four distinct styles identified by Gregorc be differentiated on the basis of the teachers' construct systems? and
4. Do those teachers who change their styles over the span of student teaching also demonstrate a shift in their underlying cognitive structure as demonstrated by a change in their personal constructs?

Method

Subjects

All students enrolled in a spring student teaching semester (N = 30) in a small, private, liberal arts college participated in this study. Students enrolled (26 females & 4 males) in student teaching had completed three and one-half years of course work.

Materials

The repertory grid technique was used to elicit constructs about specified teacher role types. The Style Delineator was used to identify style preferences.

Procedure

Students were asked to complete the Gregorc Style Delineator and the repertory grid at the beginning and conclusion of their student teaching assignments. The procedure for each is given below.

Repertory Grid. Subjects were asked to give names of persons who best represented their best, worst, most knowledgeable, least knowledgeable, best organized, least organized, most understanding, and least understanding teachers. They were permitted to use names of elementary, secondary, and college instructors. If they were unable to recall a particular name, they were encouraged to write something (e.g., 7th grade teacher) that would identify this person from the other teachers. The subjects placed the teachers' names or elements across the top of a prepared grid sheet (see Figure 1).

Insert Figure 1 about here

The subjects were then asked to consider three names or elements (i.e., sort one). Their names were identified by small circles which appeared in the rating boxes. Small

circles in the rating boxes identified the triad to be considered. They were asked to write a way in which two of the teachers were alike (these were rated 1 and became the emergent pole) and in what way the other element was different (this teacher was rated 5 and became the contrast pole of the construct). Subjects were then asked to give the remaining teachers in sort one a 1 to 5 rating on the given construct. Triads of elements, used to elicit the 16 sorts, were presented sequentially (see Figure 1). After they had finished all 16 sorts, they rated themselves on each construct. This phase of the data collection lasted approximately 40 minutes.

Style Delineator. The style classifications were determined by the students assigning ratings to descriptive words as stated on the instrument. Ten sets of words are displayed in boxes. Subjects were asked to consider each set and assign the words a ranking of 1 to 4. Words that the subjects thought best described them were given a rating of 4. Rows and columns were tallied to determine the dominant, intermediate, and low style preferences. Scores of 27 or above, as recommended by Gregorc, indicated dominant preferences for styles: Concrete Sequential (CS), Abstract Sequential (AS), Concrete Random (CR), and Abstract Random (AR).

Results

Style Preferences and Changes

Dominant scores (27 or above) were used to place students into one or more of the four styles categories. Style preferences of these student teachers are presented in Table 1.

Insert Table 1 about here

The majority of students were found to have style preferences of CS and AR on both the January and May data collections. Fifteen of the thirty were found to have duel dominance.

Style preference shifts and nonshifts were determined by examining scores of 27 and above. For example, a student's raw scores in January of 27,33,22,18, listed in the order of CS,AS,AR,CR, changed to 32,22,23,23 in May. These were analyzed as a nonshift in CS dominance and also an AR shift to CS. Another student's scores of 20,27,29,24 to 27,24,23,26 were analyzed as shifts from AS and AR to a CS dominance. Changes in preferred styles from January to May are represented in Figure 2.

Insert Figure 2 about here

The correlations for students' preferences between the

January and May data collection were: r = .55 for the CS style; r = .33 for the AS style; r = .36 for the AR style; and r = .44 for the CR style. However, preferred dominance shifts do not appear to be as great as correlational statistics would indicate.

Construct Systems

This section considered the student teachers' constructs for each of the styles. In order that the construct systems for each style might be considered, it was necessary to analyze only those students who had strong preferred dominance in one style. Table 2 presents the distribution according to point preference.

Insert Table 2 about here

Adequate representation of the AS and CR styles was not found; therefore, these styles were excluded. Sufficient students were found to have a strong dominance for the CS style (N = 8) and AR style (N = 8) for analysis in this study.

Construct ratings of 1 to 5 for the CS and AR groups were placed in order of similarity by utilizing the sociogrid analysis on the Planet (Shaw, 1982) computer program. This analysis produced an ordering of each group's constructs relative to the shared agreement among the pattern sorts. This is theoretically based on Kelly's (1955)

commonality corollary. The commonality of the group was determined by the similarity found among the ratings assigned to the elements. Those patterns shared by students above a given per cent (determined to some extent by the capacity of the computer) were entered into the focus program of the Planet. This program reordered the patterns according to their similarity and produced construct and element clusters representative of the groups' construed relationships.

The CS group had 37 of their 87 constructs that had a similarity match of 61% and above. (i.e., They rated the elements or teachers similar on the 5 point scale.) Element clusters of the CS group are presented in Figure 3.

Insert Figure 3 about here

Surface level constructs were not included in the calculations. Pilot data indicated that tree formations did not vary when surface level constructs (e.g., mustache/no mustache, skinny/fat) were deleted. Focused clusters appear to represent a normal tendency to place all the teachers with positive characteristics together and all the teachers with negative characteristics together. High percentages of relationships construed among the elements indicated that the CS group considered the Best Teacher to be well organized (90%) and the Most Knowledgeable to be related to

how they perceive themselves (84%). The group construed the Least Organized teacher to be relationally similar to the Worst teacher (80%).

The AR group had 43 out of 88 constructs that had a similarity match of 61% or above. A significant difference was not found between the two groups on the total number of constructs or the number of similar constructs among each group's members. Element clusters of the AR group are presented in Figure 4.

Insert Figure 4 about here

The two main clusters of the AR group, as compared to the CS group, appeared to indicate differences between these groups' construct systems. The AR group did not indicate that a relationship existed between the Least Organized teacher and their Worst, Least Knowledgeable, or Least Understanding teachers. Organization, appears to be a characteristic to which AR's are somewhat indifferent. In addition, they considered their Best teachers to be their Most Knowledgeable (85%). They rated themselves to be similar to their Most Understanding teachers (79%).

Constructs of the two groups appeared to cluster into three main categories: personal traits, teaching qualities, and techniques. These were sorted by the investigators into these categories for analysis and will be discussed below.

Thirty-two per cent of the verbal labels given by the CS group were classified in the Personal Trait Category while the AR group had 49 per cent. The AR group's verbal labels were characterized by descriptions and observations of people in scalar terms (e.g., sense of humor-friendly/too serious-cold; casual manner/formal manner). The CS group appeared to give personal perceptions in dichotomous terms (e.g., I like/I don't like; felt comfortable/didn't feel comfortable).

The Teaching Quality Category represented 65 per cent of the verbal labels for the CS group and 39 per cent for the AR group. The difference between the groups was noted in the degree of emphasis. The AR group's constructs had a tendency to include communication and knowledge (e.g., explains well; clear instructions; good/poor communicator; taught from knowledge/taught from book; not extremely well informed; scatterbrained). The CS group's verbal labels included delivery of lessons and teaching skills (e.g., outdated materials-behind time; lessons with purpose; class well worthwhile; fresh ideas/routine classroom; good teaching skills; laid back).

The Technique Category was represented by 9 per cent of the AR group's constructs. This group gave constructs such as: moved around while teaching/sat at desk; used outside media/strict lesson plans; lecture only/variety; taught by discussion/ lecture only. The CS group's verbal labels were

not represented in this category.

Style Shifts of Individual Cases

Research question four addresses those individual student teachers who demonstrated a shift in their preferred orientation styles as measured by the Style Delineator. Specifically, this section considers the construct systems of student teachers who engaged in dramatic style shifts following their student teaching experiences. The nature of their experiences might be better understood through analyses of their constructs before and after their student teaching semester. Each case selected will be examined for: (a) any differences in the focused element clusters resulting from the analysis of constructs done by the Planet microcomputer program and (b) any changes that may have occurred in verbal label content.

It should be emphasized that students manifesting substantial style changes were uncommon. The majority of the cases (73%) showed no change in preferred style before and after student teaching.

Case #1: AS to CS. The first student to be examined shifted from Abstract Sequential to the Concrete Sequential style. The analysis of her grid yielded an interesting concomitant shift in the organization of elements in her Repgrid. In January, the student teacher had placed the Least Organized teacher and the Most Understanding teacher in the same dyad at a 64% level of agreement. After

completing student teaching and after indicating a shift from abstract to concrete, on the Style Delineator, this same student linked the Least Organized and the Worst teacher at the 83% level. This shift would suggest that the student teaching experience provided a rather dramatic impact as she reassessed the relative contribution of organizational detail and concrete thinking.

An analysis of the actual constructs used by this student to differentiate between and among teacher roles did not reveal much change before and after teaching. In January, the student used 12 deep level constructs while the May Repgrid yielded only 9. In addition, there were fewer constructs that could be labeled education related in the May testing than in the January data gathering. While disappointing, it is certainly consistent with the shift from Abstract Sequential to Concrete Sequential. Overall, the student had a rather complex set of constructs prior to student teaching and appeared to rigidify them following the semester of induction into teaching.

Case #2: CS to AS. An opposite case of the one given above is of a student who began the semester as a Concrete Sequential and shifted to a dominant mode of Abstract Sequential. The element clusters of the pre-student teacher were quite consistent with the CS designations in that the "good" and "bad" teacher roles clustered tightly. The May focused grid yielded precisely the same structure and did

not reflect shifts in organizational patterns for teacher roles. Whatever shift may have occurred in style preferences does not appear to have had a concomitant shift on the Reptest.

An analysis of the constructs used to differentiate between and among teaching roles also failed to disclose any demonstrable shifts during student teaching. One interesting result did appear in the clustering of constructs used. The May analysis appeared to be richer and contain a more complex organizational pattern. This would be consistent with the shift from concrete to abstract.

Case #3: AS to AR. The third case chosen for analysis was the student who shifted from the Abstract Sequential to the Abstract Random. Based upon this shift, we would expect to see a student with an initial tendency toward abstractness to retreat even further from structure by placing a high emphasis on random rather than sequenced events. Initially, the AS student clustered the positive teacher roles of Best, Most Knowledgeable, Most Understanding, and Self in one cluster separate from the Best Organized role, which appeared reasonable. The May structure which emerged appeared to be truly "random" in that Best Organized, Least Organized, and Least Understanding were clustered together while Worst teacher, Most Knowledgeable, Most Understanding, and Self were clustered together. In this case, the grid analysis appeared

to mirror perfectly the shift of a rather unstructured style to a completely unstructured orientation.

An analysis of the actual constructs used by this individual yielded no major shifts from January to May; however, both Repgrids yielded more complex and unusual constructs (e.g., caring/reserved; praised us/negative feedback; prejudiced/treated equally). In addition, while most students had a fair number of repetitions from January to May, this individual used only 2 constructs which were the same. Even in these cases the unique quality came through in that one of the repeated surface level construct pairs was "coffee breath/fresh breath". While beyond the purview of this study it would appear interesting to pursue the degree of success or satisfaction which this individual encountered in the student teaching experience.

Case #4: AR to AS. Again, an opposing case is presented in that this student shifted from a dominant style of Abstract Random to a style preference of Abstract Sequential. Again, we ask the question "Is there a concomitant shift in the construct system of the student teacher as measured by the Reptest?" When the grids were focused for January and May, only minor shifts were discernible. The January grid was highly structured in contrast to the one completed in May. This was all the more surprising in that the Abstract Random classification would suggest otherwise. The shift to greater structure implied by

the development of an Abstract Sequential modality was reflected in the constructs used in the second Repgrid. Four constructs (i.e., explains, structured, prepared, organized) emerged in the period following student teaching that were not present prior to that experience. The recent acquisition of the structure dimension may have been demonstrated by the student's rating of Self as a 1 (very high) on the organization construct while only a 3 (average) on the structured construct.

Case #5: CS to AR. This case should represent a profound shift in cognitive structure if the change on the Style Delineator is accepted at face value. This student began the student teaching experience with a manifested style of Concrete Sequential which is described by Gregorc as demonstrating a realistic, patient, conservative, and perfection oriented approach to life. Following student teaching, this student was measured as an Abstract Random which is described by Gregorc as being idealistic, emotional, exhuberant, transcendent, and intense.

Perhaps better than any of the cases, this one captures the dynamics of the shift in cognitive structure during the semester. As the student teaching began, the Concrete Sequential teacher organized her constructs regarding teaching roles in an exceptionally tight and predictable fashion. The Worst and Least Organized teachers were grouped together and the Best Organized and Best teacher were

tightly linked with the Self joined closely with those two to form a positive triad. This pattern is almost the textbook expectation for a Concrete Sequential pattern.

Following student teaching, the student indicated a shift to Abstract Random on the style instrument. There was a correspondingly dramatic shift in construct organization of the Reptest. The May focused grid showed a shift to link the Self with the Most Knowledgeable teaching role. Also an equally strong dyad emerged linking the Most Understanding and Least Understanding teaching roles. This represents the ultimate in abstractness and/or randomness! The Best teacher role is still linked with the Best Organized role but not as tightly as in January.

An examination of the specific constructs used to differentiate between and among the teacher roles did not yield great differences. The May grid was composed of more superficial constructs than the January grid, but neither grid contained exceptionally complex constructs.

Case #6: CS to CR. The last case involved a student's shifting from Concrete Sequential to Concrete Random. Prior to student teaching this individual paired the Best teacher and Most Organized at the 94% level of agreement which is highly consistent with the Concrete Sequential orientation. The Self and Most Understanding roles were linked at an 87% level. Following student teaching, the move from sequential mode to random mode was paralleled by a movement of a less

compact structure on the focused grid. While the May analysis did find the Best and Rest Organized roles still paired, there was an even higher pairing of Self and the Most Knowledgeable teacher role. Another unusual shift occurred in May in that the Most Understanding and Least Understanding roles were linked, albeit at a reasonably low level of 60% agreement. All pairings in the May grid were at relatively lower levels of agreement which is consistent with the shift from sequential to random orientation on the Gregorc instrument.

An examination of the verbal constructs used on the Repgrid indicated a shift on the second administration to a more complex set of constructs. For instance, 7 of the January constructs were considered superficial while only 4 were considered to be at this level in May.

Discussion

As in most research studies, some of our initial questions received partial answers while others remain problematic and invite further scrutiny. Each proposed research question will be discussed below.

1. What styles preferences can be identified among student teachers?

Two limited conclusions may be drawn from our small sample. First, consistent with the work of Gregorc, we found one-half of our student teachers displayed one dominant style while the other half exhibited two preferred

styles of orienting to the world. Second, our sample contained roughly equal numbers of Abstract Random students and Concrete Sequential students with very few representatives of the other two quadrants.

If these findings are replicated, it may be interesting to learn the reasons for the preponderance of two rather extreme styles and the absence of two others. Gregorc has indicated (Personal Communication, September, 1985) the lack of Abstract Sequentials and Concrete Randoms found among experienced teachers. He speculated that these styles may find the typical public school environment to be incompatible with their preferences.

2. What changes occur, if any, on students' scores on the Gregorc Style Delineator during their student teaching semester?

While the question of stability of style preferences has yet to be determined conclusively, it appears from our sample that one semester of student teaching did not yield major shifts in preference; however, there are clear exceptions to this generalization. Thirteen of 17 Concrete Sequentials and 14 of 17 Abstract Randoms demonstrated consistent preferences before and after student teaching. No systematic patterns occurred among the preference changes as students shifted to all three of the remaining quadrants. Clearly, both stability and change are desirable outcomes of an intense socialization experience. It remains to be

determined which individuals make changes, for what reasons, and with what consequences.

In addition to actual changes in style preference, speculations on other reasons for variability are offered. The age of our subjects was lower than most of the samples reported by Gregorc. It is possible that greater stability would occur with later development. Additionally, the vocabulary involved in the test may have posed problems for some of the students as well as the meanings of some terms (e.g., aesthetic). Finally, our small sample may have contributed to the greater variability of the results. A sample of 130 students is being investigated presently to respond specifically to this issue.

3. Can the four distinct styles identified by Gregorc be differentiated on the basis of the teachers' construct systems?

While our study did not contain sufficient numbers of Abstract Sequentials and Concrete Randoms we did find differences in the construct systems of the other two groups. Concrete Sequential student teachers considered the Best teachers to be well organized while the Abstract Random paired their Best teachers with the Most Knowledgeable. Lack of organization was linked to the Worst teacher by the Concrete Sequentials while the Abstract Randoms appeared to tolerate varying degrees of organizational structure. Finally, the Concrete Sequentials linked themselves to the

Most Knowledgeable teachers while the Abstract Randoms rated themselves as similar to the Most Understanding teachers. Clearly, there appears to be substantiation for the claim of Gregorc that style is indicative of deeper strata of meaning. Gregorc (1984, p.51) stated:

> When viewed from a phenomenological perspective, stylistic characteristics reveal themselves to be surface indicators of two deep levels of the human mind: whole systems of thought, and peculiar qualities of the mind which an inidvidual uses to establish links with reality. ...Like the need for options, the search for meaning, and the wont to draw inferences, these characteristics are integrally tied to deep psychological constructs.

The present study, utilizing Kelly's theoretical framework and grid technique, has permitted an initial estimate of the linkage about which Gregorc speculated.

4. Do those teachers who change their styles over the span of student teaching also demonstrate a shift in their underlying cognitive structure as demonstrated by a change in their personal constructs?

Data from this study were suggestive of a relationship between a shift in style preference and construct system changes; however, further work is particularly needed on this question. Evidence of this relationship, in this study, is based upon the analysis of a series of case studies. The

relationship was stronger for some of the cases and weaker for others. The case of the student teacher shifting radically from Concrete Sequential to Abstract Random represented a clear example of the potential utility of these modes of analysis. The shift of underlying cognitive structure appeared to mirror perfectly the indicated style shift as measured by the Gregorc scale.

Implications

The analysis of shifts in styles and corresponding changes in underlying cognitive structures of student teachers raises far more questions than answers. A basic question is raised regarding the permanence or plasticity of styles. Gregorc (1982b; 1984) argued for the permanence of styles as unchanging patterns or orientations to life. In spite of this argument, our data suggest that changes do occur and further, that these changes appear to be related to underlying changes in student teachers' conceptual systems.

One implication derived from our study would argue for the mapping and measurement of students' conceptual systems as they progress through their education training programs. While our data are merely suggestive, they indicate that the "styles" or "systems" of students are amenable to analysis and possibly open to change.

Another implication of this study raises the issue of appropriateness or inappropriateness of various styles of

teaching. While Gregorc (1984) has effectively dodged the question of relative classroom effectiveness of each style, the question remains. Which outcomes are seen as more or less desirable for which levels or kinds of instruction?

Perhaps one straightforward implication might be to use the Repgrid to elicit construct systems of teacher education students at various stages in their training to allow them to raise their level of awareness about themselves and others. If students are aware of the ways in which they perceive people, situations, and events in their educational environments, it may help them to consciously choose certain patterns for further development and other patterns for elimination.

Finally, it might be argued that the greatest gain of helping teachers raise their awareness of their own unique constellation of constructs and patterns of perceiving is that this might lead to an internalization of the notion that their learners also possess a unique set of constructs and ways of perceiving reality.

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Table 1

Dominant Style Preferences of Student Teachers on the Gregorc Instrument

	CS	AS	AR	CR	NP
JANUARY	17	4	17	7	1
MAY	17	5	19	10	
N = 30					

Note. Some subjects demonstrated dominance in more than one style, therefore, the N totals exceed 30.

Table 2

Frequency Distribution of Strongest Dominant Scores

	Point Preference	Frequency
Concrete Sequencial	+4	1
	+5	1
	+6	2
	+7	3
	+8	1
Abstract Sequencial	+2	1
	+6	1
Abstract Random	+4	3
	+6	1
	+7	3
	+11	1
Concrete Random	+2	1
	+6	1

last 4 ID numbers | | | | |

college/university |

male/female | M | F |

certification | ElCh | Elem | Sec |

classification | F | S | Jr | Sr |

Figure 1. Grid response sheet..

RESPONSE SHEET

Sort	RATED 1	No.1	No.2	No.3	No.4	No.5	No.6	No.7	No.8	RATED 5	SELF
1		o		o		o					
2			o		o		o				
3				o		o		o			
4					o		o		o		
5			o		o				o		
6		o		o				o			
7			o				o		o		
8		o				o		o			
9		o	o		o						
10		o					o		o		
11		o				o	o				
12			o			o		o			
13			o	o		o					
14				o	o			o			
15				o	o				o		
16							o	o	o		

After you have finished all 16 sorts, unfold the SELF column on the right. Think about yourself on each of the descriptions as if you were a teacher **TODAY** and place a 1 to 5 rating for each.

Figure 2. Style shifts of student teachers on the Gregorc instrument from January to May.

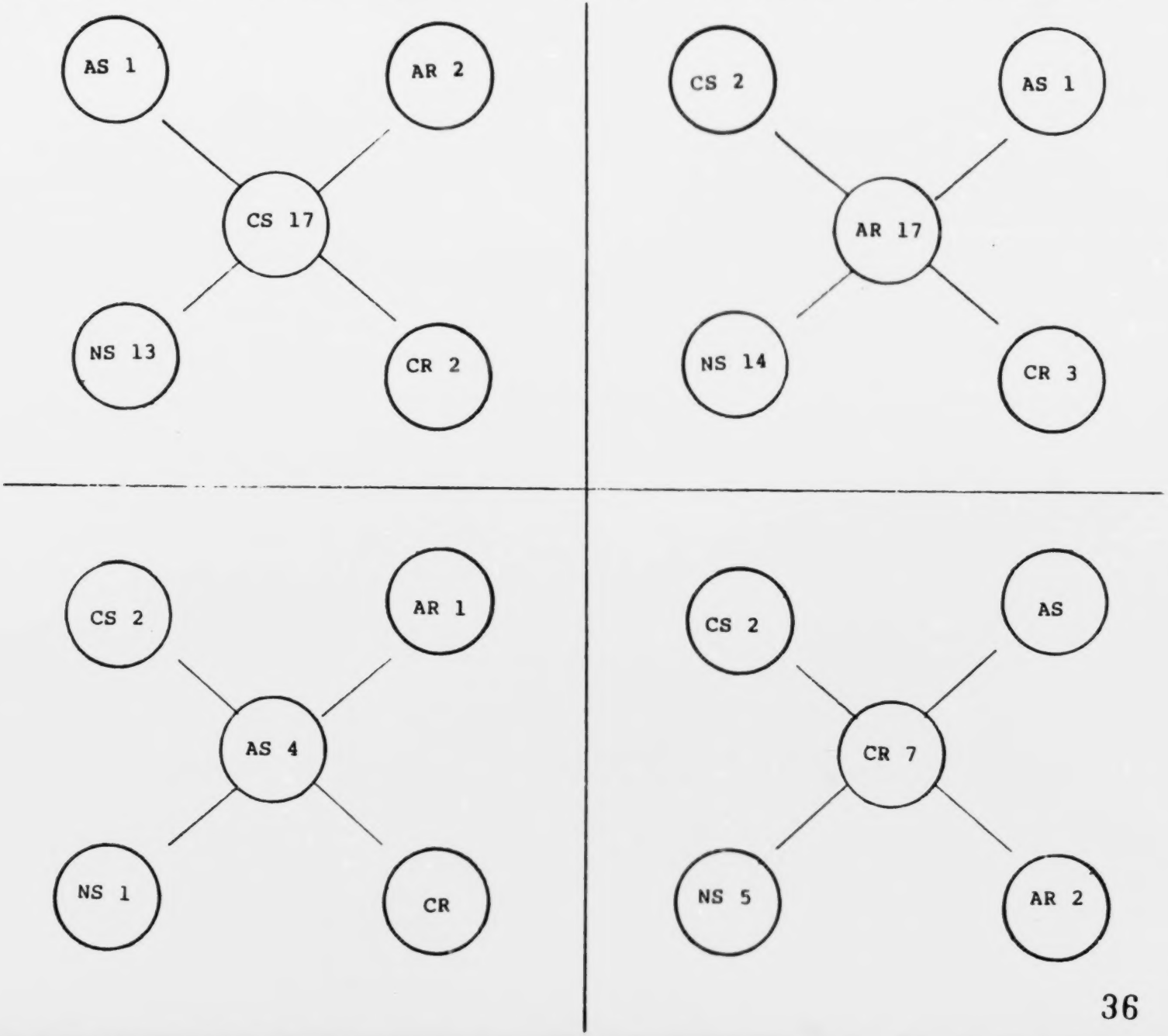
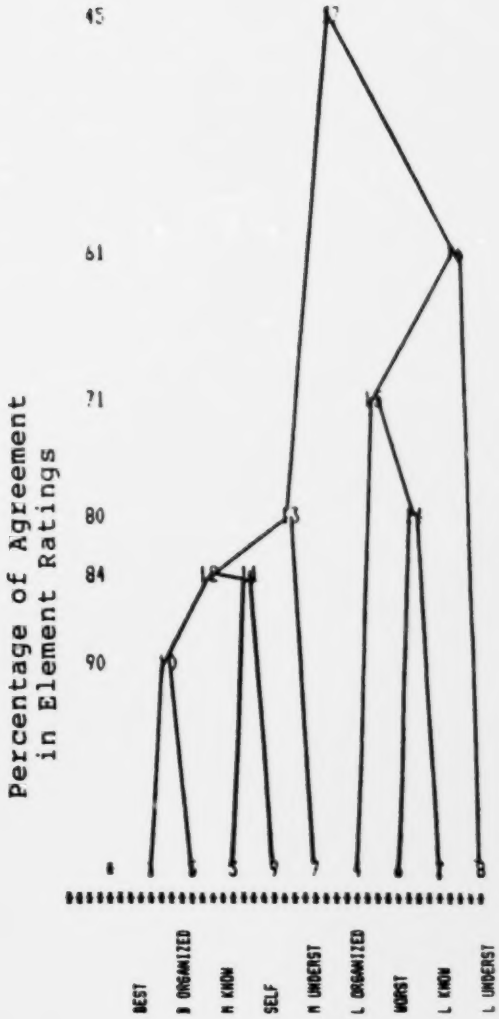
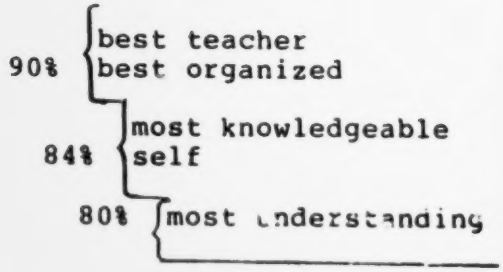


Figure 3. Element clusters of CS group.



(a)



(b)

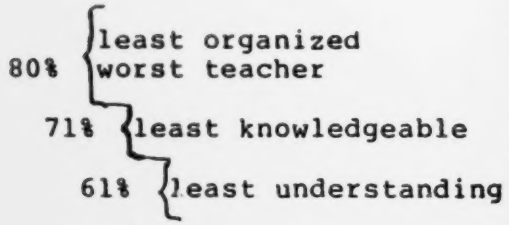


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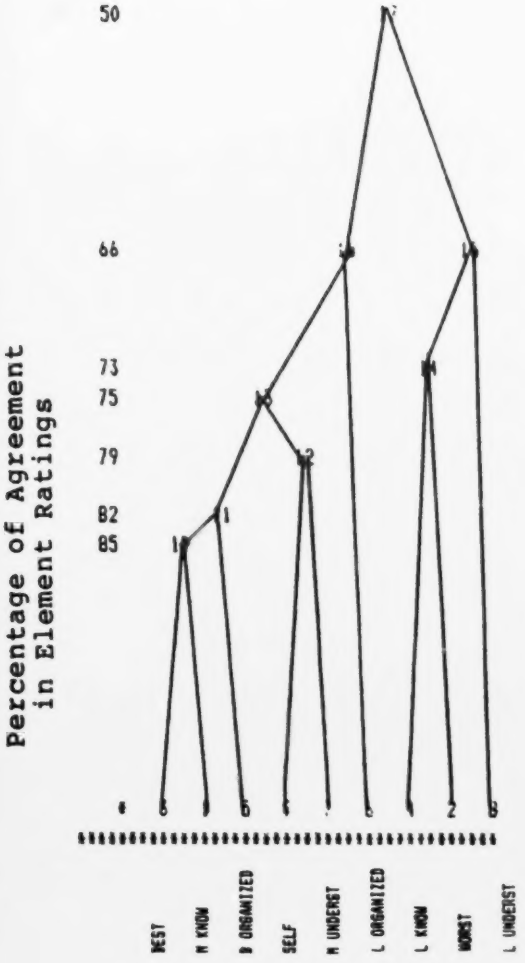
Figure 4. Element clusters of AR group.



(a)
- 85% best teacher, most knowledgeable
- 82% best organized
- 75% self, most understanding
- 66% least organized

(b)
- 73% least knowledgeable, worst teacher
- 66% least understanding